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CONSULTING ENGINEERS
RADIO AND TELEVISION

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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

February 3, 1993

Ms. Donna R. Searcy
Secretary
Mail Stop Code 1170
Federal Communications Commission
1919 M Street, N.W.
Washington, D.C. 20554

Dear Ms. Searcy:

Enclosed is an original and four copies of the Hammett & Edison Reply Comments in MM Docket 87-268, *Advanced Television systems and their Impact upon the Existing Television Broadcast Service*. The comment deadline is February 8, 1993, so these comments are filed timely.

Sincerely,

Robert L. Hammett

jk

Enclosures (5)

cc: Mr. S. Merrill Weiss (w/enclosure)
Mr. Michael C. Rau (w/enclosure)
Mr. Theodore D. Frank (w/enclosure)
Jonathon D. Blake, Esq. (w/enclosure)

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FEDERAL COMMUNICATIONS COMMISSION
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Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of

Advanced Television Systems
and Their Impact upon the Existing
Television Broadcast Service

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MM Docket No. 87-268

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REPLY COMMENTS OF HAMMETT & EDISON, INC.

The firm of Hammett & Edison, Inc., Consulting Engineers, hereby submits its reply comments in the above named proceeding. Hammett & Edison, Inc., is a professional service corporation that has provided engineering consultation to the broadcast industry since 1952. During the past forty-one years we have had considerable experience in frequency allocation matters, television station design, and resource utilization.

After reviewing the Comments filed on January 7, 1993, by the National Association of Broadcasters, the Association for Maximum Service Television, Inc., and the Association of America's Public Television Stations, among others, it appears to us that the Federal Communications Commission's "Sample Table" in its Second Further Notice of Proposed Rulemaking released August 14, 1992, should be revised. From our own allocation studies, it is also apparent that the Commission staff has devoted considerable resources and expertise to the task of finding an additional channel for each present television broadcaster to permit "simulcast" operations during the transition period from NTSC to high-definition television. We believe that a different procedure has merit and should be considered.

ON-CHANNEL HDTV

Our suggestion is simply that the ultimate ATV operation of each station be on the same channel to which it is now licensed.* Since operation with ATV signals is less subject to interference than the present NTSC signals, it follows that the ultimate permanent ATV operations could be established on the existing channels with no significant interference among stations.

It is further suggested that all channels now reserved for educational uses, but not yet assigned, continue to be reserved. Maintaining the availability of these channels for future ATV operations would satisfy the concerns expressed by public broadcasters over the Commission's proposed reallocation of the reserved channels to other cities in its "Sample Table."

TRANSITION SCENARIO

During the transition period, stations would operate their second service on interim channels to be assigned by the FCC in a Table similar to the "Sample Table" recently published. Such interim operation would usually be with less-than-maximum power and antenna height. During the transition period, each station would operate its maximum facilities with either NTSC or ATV transmissions, whichever would best serve the public at the time, primarily depending upon the growth of the ATV receiver population in each market. For example, during the latter stages of the transition period, stations would relegate NTSC service to the interim channel using the less-effective interim antenna.

The suggested changeover procedure does not depend on the two technological considerations discussed below, but it would be facilitated by them. First, it is our considered professional opinion, based on theoretical considerations, on HDTV field tests

* To resolve conflicts with the land mobile service, it may prove advantageous to reassign stations from the upper end of the UHF band to lower frequencies in the UHF or VHF bands. This would affect only a few stations and is not a necessary part of our suggested use of present channels.

in which we have been involved, and on discussions with equipment manufacturers, that many stations could satisfactorily transmit ATV signals using their present antenna system and, in some cases, their present transmitters. Field tests to verify the feasibility of such operation are urgently needed, because economies may be available to broadcasters wishing to commence ATV operation.

Second, the laboratory tests being conducted by the Advanced Television Test Center show that, except for the co-channel case, the interferences caused by ATV and by NTSC operations are not markedly different. The susceptibilities of these two systems are also quite similar. Thus the impact of a station on the allocation network will usually not be markedly affected by whether that station operates ATV or NTSC. This should make it possible for individual stations to select which of their two channels would be used on which antenna and thereby provide the maximum service to the then-existing population of receivers.

All transitions could be completed by the time now mandated by the Commission or at such other date as may prove to be in the public interest. As noted above, interference conditions will generally favor the ATV service and broadcasters could be required to give proper consideration to the interference they might receive or cause on the channels used for NTSC service. A relaxation of present intermodulation taboos would be appropriate during the transition period in order to provide maximum flexibility of interim channel assignments.

PRACTICAL PROBLEMS WITH COMMISSION'S PRESENT PLAN

In contrast to the above suggested plan, which would cause minimum disruption of present channel assignments, the Commission's plan would require all stations to use new frequencies for the ultimate ATV operation. Also, most stations would be required to construct new main antennas on top of their towers to accommodate ATV on their new frequencies. Further, they would be required to construct temporary antennas for interim

ATV operation and perhaps second temporary antennas for NTSC operation during the later stages of the interim period.

As noted in the Comments filed on January 7, 1993, by S. Merrill Weiss: "There will undoubtedly be stations that find it difficult or impossible to construct full transmission facilities on existing towers and that find it equally difficult or impossible to erect new towers or to obtain necessary tower space from others. This problem is expected to be especially acute for smaller stations in larger markets, the stations that very often rent space where additional capacity will not easily become available." Our suggested use of present assigned channels for the ultimate ATV operation would in many cases facilitate solutions to the problems referenced by Mr. Weiss.

AMST COMMENTS

As noted in the Comments filed January 7, 1993, by the Association for Maximum Service Television, Inc.: "Neither the Commission nor the broadcast industry knows with any certainty at this point what the future holds." We therefore also support the Commission's decision not to promulgate a definition of "ATV programming" until sufficient information regarding the complete potential of ATV programming is available. The greater flexibility of the allocation plan that we suggest would allow the individual broadcasters to make the best possible local judgments of when to offer ATV programming to the wider audience that can be reached with their presently licensed facilities.

POSSIBLE FUTURE TRANSFER OF SPECTRUM

If it is determined to be in the public interest to acquire spectrum from broadcasters to allot to other services, it is suggested that 72 MHz of UHF spectrum from Channels 58 through 69 could be made available for land-mobile communication or other non-broadcast purposes, after the transition period. These UHF frequencies are particularly desirable for this purpose, since they are adjacent to the frequencies now used

by land-mobile services. These services are now well established in UHF using small vehicular antennas and relatively restricted service areas. Those VHF frequencies that the Commission apparently contemplates diverting to land-mobile users would be less suitable for them.

CONCLUSION

The ultimate operation of ATV on presently licensed channels, after the transition period, would:

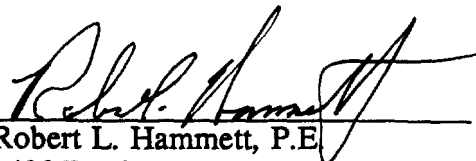
1. Maintain present wide area service
2. Most nearly replicate existing service areas
3. Preserve VHF spectrum for broadcast use
4. Permit some stations to institute ATV service with full coverage at the earliest possible time
5. Preserve channel-identity of stations
6. Preserve educationally-reserved channels for future use.
7. Provide economies of construction.

The optimizing of an interim allocations plan can be accomplished using the Commission's allocation software, starting with the assumption that all final ATV operation will be on present channels, except for any UHF stations be moved to lower frequencies.

The Commission is respectfully requested to consider the potential merits of such an allocation plan, which would appear to be of material benefit to broadcasters and the public. This plan also could permit an equitable solution to the land-mobile conflicts addressed in Docket 85-172.

Respectfully submitted,

HAMMETT & EDISON, INC.
Consulting Engineers

By 
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1400 Rollins Road
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February 3, 1993

CERTIFICATE OF SERVICE

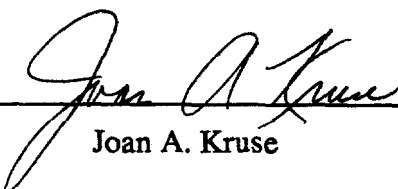
I, Joan A. Kruse, certify that a copy of the foregoing Reply Comments of Hammett & Edison, Inc., Consulting Engineers, in MM Docket No. 87-268 was served on this 3rd day of February 1993, by first-class, U.S. Mail, postage prepaid, to the following persons:

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